Remarks

Claims 28, 29, 32-48 are in the case. Claims 28, 33, 38 and 46 have been amended and claims 47-48 are new. Applicants have amended claim 28, 33, 38 and 46 and added new claims 47-48 to better describe the invention. Support for the amendment of the claims and the new claims may be found in the examples. As described in the previous response, a person skilled in the art would be able to calculate the mole percent "R" groups that are hydrogen for the applicable silicone resin. For example in Example 3, the silicone resin is $(Me_3SiO_{1/2})_{0.10}(MeHSiO_{2/2})_{0.19}(PhSiO_{3/2})_{0.71}$ where Me denotes methyl and Ph denotes phenyl. Mole% of R's that are Hydrogen = mole hydrogens/ moles all R groups = ((.19)(1))/((.1)(3) +(.19)(2) +.71(1)) = .19/1.39 = 0.137 (x100) =13.7 mol% of R's =H. Since claim 1 previously required "greater than 0.5 mole percent of the silicon-bonded R groups are silicon-bonded hydrogen atoms" and Example 3 has 13.7 mol% of R's that are hydrogens Applicants have clarified their invention by specifying at least 13 mole percent of the silicon-bonded R groups are silicon-bonded hydrogen atoms. Therefore Applicants respectfully request the Examiner enter all amendments and new claims.

The Examiner rejected claims 28, 29 and 32-43 under 35 U.S.C. §103(a) as being unpatentable over Asano US2002/0055563 in view of Saito US6,451,906 or Hatanaka US2001/0044484. According to the Examiner, Asano suggests blends of thermoplastics, liquid crystal polymer and silicone compound where the silicone compound has a branched structure and can be substituted with hydrogen, aryl, etc. In addition, the Examiner suggests that Saito teaches the amount of trifunctional groups should be 50-97% for flame retarding branched polysiloxanes and Hatanaka teaches trifunctional units above 60 %, low hydroxyl and alkoxy groups and 40-80% phenyl substitution. The Examiner then says " it would have been obvious to ensure Asano's polysiloxane has 40% branching, >40% phenyl substitution and low hydroxyl/alkoxy groups for the expected advantages." Applicants respectfully disagree. However, to further prosecution, Applicants have amended Claim 28 to require that at least 13 mole percent of the silicon-bonded R groups are silicon-bonded hydrogen atoms. Applicants examples show that the addition of a silicone resin having R groups which are only methyl, phenyl, or hydrogen and having at least 13 mole percent of the R groups being silicon-bonded

hydrogen atoms provides better flame time then silicone resins having other types of R groups (see comparison example 1) or no silicon-bonded hydrogen atoms.

The Examiner also stated in the advisory opinion that he is "unable to locate an example/comparison example pair that hold all other extraneous values constant (i.e Ph content, amount of trifunctional branching, amount of tetrafunctional branching etc. Applicant's data does not isolate the effect of SiH groups in place of SiMe groups." While the Examiner is correct that all other values besides the SiH are not held constant, they do all fit within what is required by claim 28 etc. So for example, for Examples 1, 2 and 3 all provide resins having the limitations required by claim 28 and the comparison examples do not provide resins having the limitations required by claim 28. So if we look at Comparison 1, even though it contains the required amount of Si-H group, this resin does not fall within the invention because it contains R groups other than phenyl, methyl and hydrogen – in this case propyl. For the other comparison examples, they are comparatives because they do not contain any SiH groups. I hope that this provides a better explanation of what Applicants were trying to say in the previous response. Applicants would request that if the Examiner still has questions that he call to discuss his questions.

Further, the Examiner stated that Applicants' examples include other additives not required by Claim 28, for example the char catalyst. Applicants have said in the specification that the catalyst is an optional ingredient. Even though the examples may show the use of catalyst, it does not mean it should have to be added to the claims. It was added to all the examples for consistency and therefore if it had any effect it would show that effect in all the examples.

For the reasons provided above, Applicants respectfully request that the rejection under 35 U.S.C. §103(a) be withdrawn and the claims allowed to issue.

This reply is being submitted within the period for response to the outstanding office action. Although the Applicants believe in good faith that no extensions of time are needed, the

applicants hereby petition for any necessary extensions of time. You are authorized to charge deposit account 04-1520 for any fees necessary to maintain the pendency of this application. You are authorized to make any additional copies of this sheet needed to accomplish the purposes provided for herein and to charge any fee for such copies to deposit account 04-1520.

Respectfully Submitted,

Dow Corning Corporation

Patricia M Scaduto

Patricia M. Scaduto
Reg. No. 39,827
Tel: 989-496-6925

Appendix follows:

Table 3

Ex.	Thermoplastic or Thermoset Resin Type (balance to 100 wt%)	Wt% silsesquioxane resin	Wt% Char Catalyst	Wt% Teflon 6C	Delta Avg HRR-Control	Delta Peak Heat Release	Delta Peak CO Release kg/kg	Delta Peak CO2 Release
7	PELLETHANE® 2355-75A	1	0.03	0.3	-110	-944	-0.0084	-3.835
8		1	0.00	0.0	-24	-768.5	-0.07255	-6.295
9		5	0.03	0.3	-692	-1443	0.28825	-0.805
10		5	0.00	0.0	-286.5	-690.5	-0.6248	-17.365
11		Virgin			0	0	0	0
12	CALIBRE® 200-22 (85%)	1	0.03	0.3	-478.5	-738	0.3825	7.025
13	CRASTIN® 6129 (15%)	1	0.00	0.0	-243.5	-630.5	8.9275	180.15
14		5	0.03	0.3	-535	-1013.5	0.3635	7.39
15		5	0.00	0.0	-437	-720	2.54675	61.74
16		Virgin blend			0	0	0	0
17	CALIBRE® 200-22 (85%) MAGNUM® (15%)	1	0.03	0.3	-1002.5	-521	0.195	2.6
18		1	0.00	0.0	-1405.5	-1638	1.0455	20.17
19		5	0.03	0.3	-1036	-657	2.4795	28.13
20		5	0.00	0.0	-189	-46	0.20545	4.72
21		Virgin blend			0	0	0	0
22	CRASTIN® 6129	1	0.03	0.3	-131	-585.5	-1.1642	-43.105
23		1	0.00	0.0	-2694	4200	-1.6595	-54.7
24		5	0.03	0.3	-1033	-1500	1.5329	-52.54
25		5	0.00	0.0	662	141.5	-1.375	-46.36
26		Virgin			0	0	0	0
Comp. Ex. 5	AMOCO® 4018	1	0.03	0.3	514	57.5	-0.35315	-1.575
Comp. Ex. 6		1	0.00	0.0	233	768.5	8.11185	174.455
Comp. Ex. 7		5	0.03	0.3	1893	2125.5	-0.34365	1.745
Comp. Ex. 8		5	0.00	0.0	248.5	332.5	2.08335	35.585
Comp. Ex. 9		Virgin			0	0	0	0

The examples of the invention provide thermoplastics with excellent flame retardant behavior without the use of Polytetrafluoroethylene Powder (Teflon®) halogen-containing additives. Addition of Polytetrafluoroethylene Powder to the flame retarded compositions of this invention in some cases further improved the flame retardant and UL94 behavior of the compositions of this invention.